UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,181	11/26/2003	Tony F. Rodriguez	P0976	5733

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EXAMINER
KAU, STEVEN Y

ART UNIT	PAPER NUMBER
2625	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/723,181	RODRIGUEZ ET AL.
	Examiner	**Art Unit**	
	Steven Kau	2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>26 November 2003</u>.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-21</u> is/are pending in the application.

　　4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-21</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>26 November 2003</u> is/are: a)☒ accepted or b)☐ objected to by the Examiner.

　　Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

　　Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

　　a)☐ All b)☐ Some * c)☐ None of:

　　　1.☐ Certified copies of the priority documents have been received.

　　　2.☐ Certified copies of the priority documents have been received in Application No. _____.

　　　3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

　　* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
　　Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
　　Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1.   There is no Information Disclosure Statement submitted (IDS) by the applicants.

Therefore, no IDS is under consideration.

Provisional Application

2.   This Office Action recognizes that applicant claims priority to U.S. Provisional

Application Nos. 60/430,014, filed Nov. 28, 2002, 60/440,593, filed Jan. 15, 2003,

60/466,926, filed Apr. 30, 2003 and 60/475,389, filed Jun. 2, 2003.

Double Patenting

3.   The nonstatutory double patenting rejection is based on a judicially created
doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the
unjustified or improper timewise extension of the "right to exclude" granted by a patent
and to prevent possible harassment by multiple assignees.   A nonstatutory
obviousness-type double patenting rejection is appropriate where the conflicting claims
are not identical, but at least one examined application claim is not patentably distinct
from the reference claim(s) because the examined application claim is either anticipated
by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140
F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29
USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir.
1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422
F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163
USPQ 644 (CCPA 1969).
        A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d)
may be used to overcome an actual or provisional rejection based on a nonstatutory
double patenting ground provided the conflicting application or patent either is shown to
be commonly owned with this application, or claims an invention made as a result of
activities undertaken within the scope of a joint research agreement.
        Effective January 1, 1994, a registered attorney or agent of record may sign a
terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with
37 CFR 3.73(b).

4.   Claims 1 and 17 are provisionally rejected on the ground of nonstatutory

obviousness-type double patenting as being unpatentable over claim 1 of copending

Application No. 10/836,094 in view of Hilton et al (Hilton) (US 2004/0075869).

Although the conflicting claims are not identical, they are not patentably distinct from

each other because the invention scope of the claims is identical to the claim of the

copending Application N0. 10/836,094.

        This is a provisional obviousness-type double patenting rejection because the

conflicting claims have not in fact been patented.

        Claims 1 and 17 are drawn to "a method for analyzing an image of a printed

object to determine whether the printed image is a copy or an original".

        Claim 1 of the copending Application N0. 10/836,094 is drawn to an identical

claim invention and disclose the same limitation as claims 1 and 17 of the current

application

        Re. claim 1 in the current application vs claim 1 in the copending application: The

preambles are identical. Claim 1 of the current application claims for "determining

whether a machine readable auxiliary signal is embedded in the image, wherein the

auxiliary signal is embedded at embedding locations using a set of two or more print

structures that change in response to a copy operation, the change causing a

divergence or convergence of a characteristic of the print structures such that the

machine readable signal becomes more or less detectable; and based on evaluating the

machine readable auxiliary signal, determining whether the printed object is a copy or

an original". Claim 1 of the copending application recited "analyzing a machine readable

auxiliary signal that is embedded in the image, wherein the auxiliary signal is embedded

at embedding locations using a print structure that change in response to a copy

operation, the change causing a divergence or convergence of a characteristic such

that the machine readable signal becomes more detectable; and based on evaluating

the machine readable auxiliary signal, determining whether the printed object is a copy

or an original". The scope of claim 1 in the copending application teaches all the

limitations of the claimed inventions in claims 1 and 17 of the current application.

Hilton discloses "document printed with graphical symbols which encode

information", in that he teaches a set of two or more print structures that change in

response to a copy operation {e.g. different sizes of graphical symbols, and different

color} (Par. 0016 & Par 0084).

Therefore, it would have been obvious to one of ordinary skill in the art at the

time of the invention to have the copending Application to protect against falsification

rather than copying and to have a conventional machine readable method of

authentication (Par, 0039).

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

6.   Claims 1-4, 6-10 & 14-21 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Suzuki et al (Suzuki) (US 2002/0054692) in view of Hilton et al

(Hilton) (US 2004/0075869).

With regard to claim 1, Suzuki discloses an image processing system, in that he

teaches a method for analyzing an image of a printed object to determine whether the

printed image is a copy or an original, the method comprising: determining whether a

machine readable auxiliary signal is embedded in the image {e.g. a digital watermark

embedded in the image} (Figure 25, Par. 0001, Par 0153 & Par. 0158); and based on

evaluating the machine readable auxiliary signal, determining whether the printed object

is a copy or an original (Par. 0262).

Suzuki differs from claim 1, in that he does not teaches the auxiliary signal is

embedded at embedding locations using a set of two or more print structures that

change in response to a copy operation, the change causing a divergence or

convergence of a characteristic of the print structures such that the machine readable

signal becomes more or less detectable.

Hilton teaches that the auxiliary signal is embedded at embedding locations

using a set of two or more print structures that change in response to a copy operation,

the change causing a divergence or convergence of a characteristic of the print

structures such that the machine readable signal becomes more or less detectable {e.g.

different sizes of graphical symbols, and different color} (Par. 0016 & Par 0084).

Therefore, it would have been obvious to one of ordinary skill in the art at the

time of the invention to have modified Suzuki to include that the auxiliary signal is

embedded at embedding locations using a set of two or more print structures that change in response to a copy operation, the change causing a divergence or convergence of a characteristic of the print structures such that the machine readable signal becomes more or less detectable taught by Hilton to protect against falsification rather than copying and to have a conventional machine readable method of authentication (Par, 0039).

With regard to claim 2, Suzuki differs from claim 2, in that he does not teach that the set of print structures include a first color and a second color that change differently in response to a copy operation.

Hilton teaches that the set of print structures include a first color and a second color that change differently in response to a copy operation {e.g. encoded into a document in such a way that a '1' and a '0' are each represented by a different colour} (Par. 0084).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Suzuki to include that the set of print structures include a first color and a second color that change differently in response to a copy operation taught by Hilton to protect against falsification rather than copying and to have a conventional machine readable method of authentication (Par, 0039).

With regard to claim 3, Suzuki differs form Claim 3, in that he does not teach at least one of the colors corresponds to an ink color that is out of gamut of a printer or scanner.

Hilton teaches that at least one of the colors corresponds to an ink color that is out of gamut of a printer or scanner {e.g. there is a range of special ink type & documents using any selection of ink colours are possible} (Par. 0005 & Par. 0060).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Suzuki to include that at least one of the colors corresponds to an ink color that is out of gamut of a printer or scanner taught by Hilton to protect against falsification rather than copying and to have a conventional machine readable method of authentication (Par, 0039).

With regard to claim 4, Suzuki differs from Claim 4, in that he does not teach a difference in luminance of the two colors changes in response to a copy operation.

Hilton teaches that a difference in luminance of the two colors changes in response to a copy operation {e.g. light areas of picture can be used Bitmorphs with a relatively low density of pixels, and heavy areas can use higher density Bitmorphs} (Par. 0024).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Suzuki to include a difference in luminance of the two colors changes in response to a copy operation taught by Hilton to protect against falsification rather than copying and to have a conventional machine readable method of authentication (Par, 0039).

With regard to claim 6, Suzuki differs from Claim 6, in that he does not teach a difference in luminance of the print structures changes in response to a copy operation due to a difference in susceptibility to dot gain of the print structures.

Hilton teaches that a difference in luminance of the print structures changes in response to a copy operation due to a difference in susceptibility to dot gain of the print structures {e.g. light areas of picture can be used as Bitmorphs with a relatively low density of pixels, and heavy areas can use higher density Bitmorphs} (Par. 0024).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Suzuki to include a difference in luminance of the print structures changes in response to a copy operation due to a difference in susceptibility to dot gain of the print structures taught by Hilton to protect against falsification rather than copying and to have a conventional machine readable method of authentication (Par, 0039).

With regard to claim 7, Suzuki differs from Claim 7, in that he does not teach the set of print structures include a first print structure having a first aliasing property and a second print structure having a second aliasing property; wherein the first print structure aliases differently than the second print structure.

Hilton teaches that the set of print structures include a first print structure having a first aliasing property and a second print structure having a second aliasing property (Figures 1-4, Par. 0058); wherein the first print structure aliases differently than the second print structure (Figures 1-4, Par. 0058).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Suzuki to include the set of print structures include a first print structure having a first aliasing property and a second print structure having a second aliasing property taught by Hilton to protect against falsification rather

than copying and to have a conventional machine readable method of authentication (Par, 0039).

With regard to claims 8, 9 & 10, Suzuki differs from these claims, in that he does not teach that the auxiliary signal is embedded by varying continuity of line structures, wherein one print structure comprises a line segment in a first color, and another print structure comprises a line segment in another color, and the line segments of the different colors are arranged by varying between the first and second colors along a printed line.

Hilton teaches that the auxiliary signal is embedded by varying continuity of line structures (Figures 1-4, Par. 0057 & 58); a line segment in a first color, and another print structure comprises a line segment in another color (Par. 0064 & 0065), and the line segments of the different colors are arranged by varying between the first and second colors along a printed line (Par. 0064 & 0065).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Suzuki to include the auxiliary signal is embedded by varying continuity of line structures, a line segment in a first color, and another print structure comprises a line segment in another color taught by Hilton to protect against falsification rather than copying and to have a conventional machine readable method of authentication (Par, 0039).

With regard to claim 14, Suzuki teaches that a storage medium on which is stored instructions for performing the method of claim 1 (Par. 0271).

With regard to claim 15, Suzuki teaches a method for creating an image to be printed on a printed object, the image being used to determine whether the printed image is a copy or an original, the method comprising: embedding a machine readable auxiliary signal in the image {e.g. a digital watermark embedded in the image} (Figure 25, Par. 0001, Par 0153 & Par. 0158); and creating a metric {e.g. Figure 14 provides steps, a procedure or a metric} to detect the convergence or divergence from an image scanned of a suspect printed object to determine whether the suspect printed object is a copy or an original (Figure 14, Par. 0081).

Suzuki differs from claim 15, in that he does not teaches the auxiliary signal is embedded at embedding locations using a set of two or more print structures that change in response to a copy operation, the change causing a divergence or convergence of a characteristic of the print structures such that the machine readable signal becomes more or less detectable.

Hilton teaches that the auxiliary signal is embedded at embedding locations using a set of two or more print structures that change in response to a copy operation, the change causing a divergence or convergence of a characteristic of the print structures such that the machine readable signal becomes more or less detectable {e.g. different sizes of graphical symbols, and different color} (Par. 0016 & Par 0084).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Suzuki to include that the auxiliary signal is embedded at embedding locations using a set of two or more print structures that change in response to a copy operation, the change causing a divergence or

convergence of a characteristic of the print structures such that the machine readable

signal becomes more or less detectable taught by Hilton to protect against falsification

rather than copying and to have a conventional machine readable method of

authentication (Par, 0039).

With regard to claim 16, Suzuki teaches a storage medium on which is stored

instructions for performing the method of claim 15 (Par. 0271).

With regard to claim 17, the structure elements of method claim 1 perform all

steps of method claim 17. Thus claim 17 is rejected under 103(a) for the same reason

discussed in the rejection of claim 1.

With regard to claim 18, the structure elements of method claim 8 perform all

steps of method claim 18. Thus claim 18 is rejected under 103(a) for the same reason

discussed in the rejection of claim 8.

With regard to claim 19, the structure elements of method claim 14 perform all

steps of method claim 19. Thus claim 19 is rejected under 103(a) for the same reason

discussed in the rejection of claim 14.

With regard to claim 20, the structure elements of method claim 15 perform all

steps of method claim 20. Thus claim 20 is rejected under 103(a) for the same reason

discussed in the rejection of claim 15.

With regard to claim 21, the structure elements of method claim 16 perform all

steps of method claim 21. Thus claim 21 is rejected under 103(a) for the same reason

discussed in the rejection of claim 16.

7.   Claims 5, 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Suzuki et al (Suzuki) (US 2002/0054692) in view of Hilton et al (Hilton) (US

2004/0075869) as applied to claim 1 and further in view of Hayashi el at (Hayashi) (US

2001/0030759).

With regard to claim 5, Suzuki differs from Claim 5, in that he does not teach the

set of print structures include a first print structure having a first dot gain property and a

second print structure having a second dot gain property; wherein the first print structure

is more susceptible to dot gain than the second print structure in response to a copy

operation.

Hayashi discloses an image processing apparatus for determining specific

images, in that he teaches the set of print structures include a first print structure having

a first dot gain property and a second print structure having a second dot gain property

{e.g. ink dot changes} (Figures 46 & 47, Pars. 0242-0245); wherein the first print

structure is more susceptible to dot gain than the second print structure in response to a

copy operation (Figures 46 & 47, Pars. 0242-0245).

Therefore, it would have been obvious to one of ordinary skill in the art at the

time of the invention to have modified Suzuki to include the set of print structures

include a first print structure having a first dot gain property and a second print structure

having a second dot gain property taught by Hayashi to reduce wasted processing time

for electronic watermark extraction processing (Pars. 0010 & 0011).

With regard to claims 11, 12 & 13, Suzuki differs from these claims, in that he

does not teach that the evaluating includes evaluating a frequency domain metric to

detect changes in the print structures; the frequency domain metric is a radial frequency domain metric, and the frequency domain metric is used to evaluate changes in color of a print structure.

Hayashi teaches that the evaluating includes evaluating a frequency domain metric to detect changes in the print structures (Figure 5, Par. 0156-0157); the frequency domain metric is a radial frequency domain metric (Par. 0150), and the frequency domain metric is used to evaluate changes in color of a print structure (Figures 8A & 8B, Pars. 0451).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified Suzuki to include that the evaluating includes evaluating a frequency domain metric to detect changes in the print structures; the frequency domain metric is a radial frequency domain metric, and the frequency domain metric is used to evaluate changes in color of a print structure taught by Hayashi to reduce wasted processing time for electronic watermark extraction processing (Pars. 0010 & 0011).

Correspondence Information

8.   Applicant is advised that the reply to this requirement to be complete must include an election of the invention to be examined even though the requirement is traversed (37 CFR 1.143).

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim

remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven Kau whose telephone number is (571) 270-1120. The examiner can normally be reached on Monday to Friday, from 8:30 AM – 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Twyler Lamb can be reached on (571) 272-7406. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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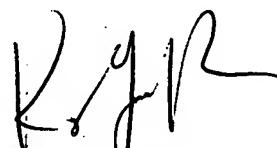
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